

# NATURAL HISTORY

VOLUME LXXXVI

1977

*Published by*  
AMERICAN MUSEUM OF NATURAL HISTORY  
NEW YORK, N.Y.

## JANUARY No. 1

|  |     |
|--|-----|
| AUTHORS.....   | 2   |
| VOLCANOES AND THE CLIMATE                                  |     |
| Owen B. Toon and James B. Pollack                          | 8   |
| A NATURALIST AT LARGE: THE NICARAGUAN SKIN CONNECTION..... | 28  |
| Bernard Nietschmann  |     |
| THIS VIEW OF LIFE: THE PROBLEM OF PERFECTION               |     |
| Stephen Jay Gould  | 32  |
| THE MANY WAYS TO BEGET A FROG                              |     |
| Martha L. Crump  | 38  |
| BROOKLYN'S HASIDIM .....                                   | 46  |
| Jerome R. Mintz  |     |
| THE GREAT STONE FACES .....                                | 60  |
| Mark D. Coburn   |     |
| NIGHT SHIFT FOR SLOTHS AND OTHER SLUGGARDS                 |     |
| G. Causey Whittow  | 66  |
| A MATTER OF TASTE: HIGH TORTE                              |     |
| Raymond Sokolov  | 75  |
| CELESTIAL EVENTS.....                                      | 80  |
| Thomas D. Nicholson  |     |
| SKY REPORTER: TROUBLESOME BLACK HOLES                      |     |
| Robert Jastrow   | 83  |
| WILDLIFE RECAPTURED.....                                   | 90  |
| Review by Gerald Carson                                    |     |
| LETTERS.....   | 97  |
| ANNOUNCEMENTS .....  | 98  |
| THE MARKET.....  | 100 |
| ADDITIONAL READING .....                                   | 101 |

## FEBRUARY No. 2

|  |     |
|--|-----|
| AUTHORS.....   | 4   |
| THIS VIEW OF LIFE: THE CONTINENTAL DRIFT AFFAIR        |     |
| Stephen Jay Gould                                      | 12  |
| A MATTER OF TASTE: HOW TO TREAT THE COMMON COLE.....   | 22  |
| Raymond Sokolov  |     |
| A NATURALIST AT LARGE: THE REMARKABLE REPLICATORS..... | 34  |
| Richard Dawkins  |     |
| ROCK ART AND THE POWER OF SHAMANS                      |     |
| Dean R. Snow   | 42  |
| SHOTGUN HOUSES.....                                    | 50  |
| John Vlach   |     |
| A COARRANGEMENT OF KINGFISHERS                         |     |
| Mila Olano and Javier Echevarri                        | 58  |
| ENDANGERED FISH OF KENTUCKY STREAMS                    |     |
| Branley Allan Branson                                  | 64  |
| HOW IT REALLY WAS .....                                | 70  |
| Dorothy Harley Eber                                    |     |
| THE FLY THAT WOULD BE KING. Robert S. Desowitz         | 76  |
| SKY REPORTER: EUV MAKES THE GRADE                      |     |
| Stephen P. Maran                                       | 85  |
| CELESTIAL EVENTS.....                                  | 90  |
| Thomas D. Nicholson                                    |     |
| THE MARKET.....  | 92  |
| ANNOUNCEMENTS .....                                    | 93  |
| A SOJOURN AMONG THE INDIANS                            |     |
| Review by Alvin M. Josephy, Jr.                        | 94  |
| ADDITIONAL READING .....                               | 100 |

## MARCH No. 3

|   |    |
|---|----|
| AUTHORS.....                              | 4  |
| A NATURALIST AT LARGE: THE WIND CALLER    |    |
| Bernard Nietschmann                       | 10 |
| A WHOOPER RALLY.....                      | 22 |
| Rodney Barker                             |    |
| POISON IN A MONKEY'S GARDEN OF EDEN       |    |
| Kenneth E. Glander                        | 34 |
| MASKED MESSAGES .....                     | 42 |
| Ann Marie Cunningham                      |    |
| REPORT FROM MARS.....                     | 48 |
| Robert Jastrow                            |    |
| LIFE ON A COLD ROCK .....                 | 54 |
| Fred Bruemmer                             |    |
| MISLEADING MANTIDS .....                  | 66 |
| George F. Rohrmann                        |    |
| THIS VIEW OF LIFE: TWIN-ENGINED SPACESHIP |    |
| Earth .....                               | 72 |
| Stephen Jay Gould                         |    |
| HIDDEN TREASURE.....                      | 79 |
| Review                                    |    |
| A MATTER OF TASTE: STRANGE FRUITS         |    |
| Raymond Sokolov                           | 84 |
| RITUAL ENEMAS ..                          | 88 |
| Peter T. Furst and Michael D. Coe         |    |
| THE MARKET.....                           | 92 |
| ANNOUNCEMENTS .....                       | 93 |
| CELESTIAL EVENTS.....                     | 94 |
| Thomas D. Nicholson                       |    |
| ADDITIONAL READING .....                  | 96 |

## APRIL No. 4

|  |     |
|--|-----|
| AUTHORS.....                                 | 2   |
| THIS VIEW OF LIFE: THE 120-YEAR BAMBOO CLOCK |     |
| Stephen Jay Gould                            | 8   |
| CELESTIAL EVENTS.....                        | 20  |
| Thomas D. Nicholson                          |     |
| THE UNNATURAL HISTORY OF TOBACCO             |     |
| Eric Eckholm                                 | 22  |
| HOT SPOTS .....                              | 36  |
| Peter R. Vogt                                |     |
| THE ENIGMA OF AZTEC SACRIFICE ...            | 46  |
| Michael Harner                               |     |
| VEST-POCKET TURTLE .....                     | 52  |
| Jim Cooper                                   |     |
| DRUMS OF CALANDA .....                       | 58  |
| Tor Eigeland                                 |     |
| THE PIT AND THE ANTLION.....                 | 64  |
| Howard Topoff                                |     |
| BESIEGED REEFS OF FLORIDA'S KEYS..           | 72  |
| Phillip Dustan                               |     |
| A MATTER OF TASTE: HUMBLE PIE                |     |
| Raymond Sokolov                              | 80  |
| THE MARKET.....                              | 84  |
| ANNOUNCEMENTS .....                          | 86  |
| SKY REPORTER: LET THERE BE DARKNESS          |     |
| Stephen P. Maran                             | 88  |
| EPIDEMIC!.....                               | 95  |
| Review by Guido Majno                        |     |
| ADDITIONAL READING .....                     | 100 |

## MAY No. 5

|   |    |
|---|----|
| AUTHORS.....                                | 4  |
| THIS VIEW OF LIFE: EVOLUTION'S ERRATIC PACE |    |
| Stephen Jay Gould                           | 12 |
| LETTERS.....                                | 20 |

|   |  |     |
|---|--|-----|
| A NATURALIST AT LARGE: PALEONTOLOGICAL HOAXES .....           | A. Myra Keen                             | 24  |
| FARMING THE EDGE OF THE ANDES .....                           | Stephen B. Brush                         | 32  |
| Photographs by Victor Engelbert                               |  | 42  |
| HOW MUSSELS GET ATTACHED .....                                | Arnold Tamarin                           | 48  |
| SHELTERS ON THE PLAINS .....                                  | Roger Welsch                             | 54  |
| CONFESSIONS OF AN ANIMAL TRAFFICKER .....                     | Jean-Yves Domalain                       | 68  |
| FABULOUS TIMBUKTU .....                                       | Klaus-Friedrich Koch                     | 76  |
| THE MARKET .....  |  | 78  |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 80  |
| A MATTER OF TASTE: BANANAMANIA .....                          | Raymond Sokolov                          | 84  |
| SKY REPORTER: THE CYGNUS A CONUNDRUM .....                    | Stephen P. Maran                         | 88  |
| UNINVITED GUESTS .....  | Review by John S. Marr                   | 92  |
| ANNOUNCEMENTS .....   |  | 94  |
| JUNE-JULY No. 6   |  |     |
| AUTHORS .....   |  | 2   |
| POST-HUMAN INTELLIGENCE .....                                 | Robert Jastrow                           | 12  |
| THIS VIEW OF LIFE: THE RETURN OF HOPEFUL MONSTERS .....       | Stephen Jay Gould                        | 22  |
| SOCIAL COMMENTARY FROM THE CEMETERY .....                     | Edwin S. Dethlefsen and Kenneth Jensen   | 32  |
| MONARCH MIGRATION .....                                       | Lincoln P. Brower                        | 40  |
| THE ALLIGATOR REVEALED .....                                  | Leslie D. Garrick and Jeffrey W. Lang    | 54  |
| CALIFORNIA LITTER .....                                       | Bruce E. Bechtol and Jerry R. Williams   | 62  |
| BOLTS FROM THE BLUE .....                                     | Richard E. Orville                       | 66  |
| LETTERS .....   |  | 74  |
| LORENZ OBSERVED .....   | Review by Garland E. Allen               | 78  |
| THE CHANGING CITY .....                                       |  | 86  |
| A MATTER OF TASTE: ORANGES AND THEIR COUSINS .....            | Raymond Sokolov                          | 88  |
| ADDITIONAL READING .....                                      |  | 92  |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 94  |
| THE MARKET .....  |  | 96  |
| ANNOUNCEMENTS .....   |  | 97  |
| AUGUST-SEPTEMBER No. 7  |  |     |
| AUTHORS .....   |  | 4   |
| LETTERS .....   |  | 8   |
| THE BIOLOGY OF AGING .....                                    | Leonard Hayflick                         | 22  |
| THIS VIEW OF LIFE: OUR ALLOTTED LIFETIMES .....               | Stephen Jay Gould                        | 34  |
| PRIZEWINNING PHOTOGRAPHS .....                                |  | 45  |
| BOTANICAS: PUERTO RICAN FOLK PHARMACIES .....                 | Mary Ann Borrello and Elizabeth Mathias  | 64  |
| Photographs by Marcia Keegan                                  |  | 74  |
| THE GREAT GRIZZLY GRAPPLE .....                               | Christopher Cauble                       | 82  |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 84  |
| A NATURALIST AT LARGE: THE BAMBI FACTOR .....                 | Bernard Nietschmann                      | 88  |
| SKY REPORTER: RINGS AROUND URANUS .....                       | Stephen P. Maran                         | 88  |
| THE CHINESE WAY OF EATING .....                               | Review by Alain Y. Dessaint              | 94  |
| A CONJUGATION OF SNAILS .....                                 | Hans Pfletschinger                       | 104 |
| A MATTER OF TASTE: UP FROM CATSUP .....                       | Raymond Sokolov                          | 108 |
| THE MARKET .....  |  | 114 |
| ADDITIONAL READING .....                                      |  | 116 |
| ANNOUNCEMENTS .....   |  | 118 |
| OCTOBER No. 8   |  |     |
| AUTHORS .....   |  | 2   |
| THE HAZARDS OF COAL DEPENDENCE .....                          | Wallace S. Broecker                      | 8   |
| THIS VIEW OF LIFE: STICKING UP FOR MARSUPIALS .....           | Stephen Jay Gould                        | 22  |
| AIRS, WATERS, AND PLACES: HARMONIOUS PARASITES .....          | Robert S. Desowitz                       | 34  |
| THE CALL OF THE DUCK .....                                    | Gilbert Gottlieb                         | 40  |
| LOOMS OF OTAVALO .....  | Joseph B. Casagrande                     | 48  |
| Photographs by Victor Engelbert                               |  | 60  |
| THE AURORAS .....   | Raymond G. Roble                         | 68  |
| THE SIEGE OF PARIS .....                                      | Gerald Carson                            | 78  |
| THE CASE OF THE MISSING MONK SEAL .....                       | Peter M. Knudtson                        | 84  |
| SKIN BATTERIES AND LIMB REGENERATION .....                    | Richard B. Borgens                       | 90  |
| THREE, TWO, ONE TORTOISE ...                                  | Peter C. H. Pritchard                    | 102 |
| THE MARKET .....  |  | 106 |
| SKY REPORTER: PHYSICS AND THE COSMOS .....                    | Jeremy Bernstein                         | 114 |
| A MATTER OF TASTE: PALM READINGS .....                        | Raymond Sokolov                          | 118 |
| THE ROOTS OF HUNGER .....                                     | Review by Dan Morgan                     | 122 |
| ADDITIONAL READING .....                                      |  | 124 |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 126 |
| ESKIMO TALES .....  | Dorothy Harley Eber                      | 131 |
| ANNOUNCEMENTS .....   |  | 132 |
| LETTERS .....   |  |     |
| NOVEMBER No. 9  |  |     |
| AUTHORS .....   |  | 7   |
| CAN ANIMALS ANTICIPATE EARTHQUAKES? .....                     | Evelyn Shaw                              | 14  |
| THIS VIEW OF LIFE: THE TELLTALE WISHBONE .....                | Stephen Jay Gould                        | 26  |
| THE SIGHTING AT PINE KNOT .....                               | Alton A. Lindsey                         | 40  |
| WHY SLUGS SQUABBLE .....                                      | C. David Rollo and William G. Wellington | 46  |
| THE GREGARIOUS BUT CONTENTIOUS WALRUS .....                   | Fred Bruemmer                            | 52  |
| THE FRESH AIR-CLEAN WATER EXCHANGE .....                      | F. Herbert Bormann and Gene E. Likens    | 62  |
| FECUND MOUFLON .....  | Raul Valdez and Leticia V. Alamia        | 72  |
| STREET DWELLERS ...   | Alan M. Beck and Philip Marden           | 78  |
| Photographs by Joan Roth                                      |  | 86  |
| A MATTER OF TASTE: THE QUALITY OF CORIANDER .....             | Raymond Sokolov                          | 90  |
| A NATURALIST AT LARGE: WALKING THE RAILROAD .....             | John Eastman                             | 94  |
| BIOS: GUAYULE BOUNCES BACK ...                                | Arthur W. Galston                        | 98  |
| A SPECIAL ANNOUNCEMENT .....                                  |  | 102 |
| THE MARKET .....  |  | 104 |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 106 |
| SKY REPORTER: RING GALAXIES ...                               | Stephen P. Maran                         | 112 |
| TROUBLED WATERS .....   | Review by Paul B. Sears                  | 116 |
| ANNOUNCEMENTS .....   |  | 118 |
| ADDITIONAL READING .....                                      |  |     |
| DECEMBER No. 10   |  |     |
| AUTHORS .....   |  | 6   |
| AIRS, WATERS, AND PLACES: DANGEROUS NYMPHS OF NANTUCKET ..... | Robert S. Desowitz and Louis H. Miller   | 10  |
| THIS VIEW OF LIFE: CARING GROUPS AND SELFISH GENES .....      | Stephen Jay Gould                        | 20  |
| THE PROBLEM WITH SIMPLE FOLK ...                              | Peter J. Wilson                          | 26  |
| EUCALYPTUS BARK .....   | Edward S. Ayensu                         | 36  |
| Photographs by Gail Rubin                                     |  | 40  |
| THE EDGE OF EUROPE .....                                      | John F. West                             | 48  |
| Photographs by Michael Spring                                 |  | 64  |
| CHINA'S ANCIENT MARINERS .....                                | Stan Steiner                             | 72  |
| SAN SALVADOR'S URBAN ORCHIDS ...                              | Peter Bernhardt                          | 80  |
| CHILEAN FLAMINGO COURT AND DANCE .....                        | Juan Muñoz                               | 90  |
| THE WOLF THAT LOST ITS GENES .....                            | James H. Shaw and Peter A. Jordan        | 92  |
| THE MARKET .....  |  | 94  |
| CELESTIAL EVENTS .....  | Thomas D. Nicholson                      | 100 |
| A MATTER OF TASTE: A CHRISTMASTIDE TREAT .....                | Raymond Sokolov                          | 106 |
| SKY REPORTER: SOLAR MAGNETISM .....                           | Harold Zirin                             | 110 |
| THE ELUSIVE MARSH BIRDS .....                                 | Review by Robert Arbib                   | 112 |
| ADDITIONAL READING .....                                      |  |     |
| ANNOUNCEMENTS .....   |  |     |

# INDEX TO VOLUME LXXXVI

## AUTHORS AND TITLES

### A

- Alamia, L.V., FECUND MOUFLON, Nov., p. 72  
Allen, G.E., REVIEW, June, p. 78  
Arbib, R., REVIEW, Dec., p. 106  
Ayensu, E.S., EUCALYPTUS BARK, Dec., p. 36

### B

- Barker, R., A WHOOPER RALLY, Mar., p. 22  
Bechtol, B.E., CALIFORNIA LITTER, June, p. 62  
Beck, A.M., STREET DWELLERS, Nov., p. 78  
Bernhardt, P., SAN SALVADOR'S URBAN ORCHIDS, Dec., p. 64  
Bernstein, J., PHYSICS AND THE COSMOS, Oct., p. 106  
Borgens, R.B., SKIN BATTERIES AND LIMB REGENERATION, Oct., p. 84  
Bormann, F.H., THE FRESH AIR-CLEAN WATER EXCHANGE, Nov., p. 62  
Bottello, M.A., BOTANICAS: PUERTO RICAN FOLK PHARMACIES, Aug., p. 64  
Branson, B.A., ENDANGERED FISH OF KENTUCKY STREAMS, Feb., p. 64  
Broecker, W.S., THE HAZARDS OF COAL DEPENDENCE, Oct., p. 8  
Brower, L.P., MONARCH MIGRATION, June, p. 40  
Bruemmer, F., LIFE ON A COLD ROCK, Mar., p. 54; THE GREGARIOUS BUT CONTENTIOUS WALRUS, Nov., p. 52  
Brush, S.B., FARMING THE EDGE OF THE ANDES, May, p. 32

### C

- Carson, G., REVIEW, Jan., p. 90;  
THE SIEGE OF PARIS, Oct., p. 68  
Casagrande, J.B., LOOMS OF OTAVALO, Oct., p. 48  
Cable, C., THE GREAT GRIZZLY GRAPPLE, Aug., p. 74  
Coburn, M.D., THE GREAT STONE FACES, Jan., p. 60  
Coe, M.D., RITUAL ENEMAS, Mar., p. 88  
Cooper, J., VEST-POCKET TURTLE, Apr., p. 52  
Crump, M.L., THE MANY WAYS TO BEGET A FROG, Jan., p. 38  
Cunningham, A.M., MASKED MESSAGES, Mar., p. 42

### D

- Dawkins, R., THE REMARKABLE REPLICATORS, Feb., p. 34  
Desowitz, R.S., THE FLY THAT WOULD BE KING, Feb., p. 76;  
HARMONIOUS PARASITES, Oct., p. 34; DANGEROUS NYMPHS OF NANTUCKET, Dec., p. 10

- Dessaint, A.Y., REVIEW, Aug., p. 94  
Dethlefsen, E.S., SOCIAL COMMENTARY FROM THE CEMETERY, June, p. 32  
Domalain, J.-Y., CONFESSIONS OF AN ANIMAL TRAFFICKER, May, p. 54  
Dustan, P., BESIEGED REEFS OF FLORIDA'S KEYS, Apr., p. 72

### E

- Eastman, J., WALKING THE RAILROAD, Nov., p. 90  
Eber, D.H., HOW IT REALLY WAS, Feb., p. 70; ESKIMO TALES, Oct., p. 126  
Echevarri, J., A COARRANGEMENT OF KINGFISHERS, Feb., p. 58  
Eckholm, E., THE UNNATURAL HISTORY OF TOBACCO, Apr., p. 22  
Eigeland, T., DRUMS OF CALANDA, Apr., p. 58  
Englebert, V., FARMING THE EDGE OF THE ANDES, May, p. 32;  
LOOMS OF OTAVALO, Oct., p. 48

### F

- Furst, P.T., RITUAL ENEMAS, Mar., p. 88

### G

- Galston, A.W., GUAYULE BOUNCES BACK, Nov., p. 94  
Garrick, L.D., THE ALLIGATOR REVEALED, June, p. 54  
Glander, K.E., POISON IN A MONKEY'S GARDEN OF EDEN, Mar., p. 34  
Gottlieb, G., THE CALL OF THE DUCK, Oct., p. 40  
Gould, S.J., THE PROBLEM OF PERFECTION, Jan., p. 32; THE CONTINENTAL DRIFT AFFAIR, Feb., p. 12; TWIN-ENGINEED SPACESHIP EARTH, Mar., p. 72; THE 120-YEAR BAMBOO CLOCK, Apr., p. 8; EVOLUTION'S ERRATIC PACE, May, p. 12; THE RETURN OF HOPEFUL MONSTERS, June, p. 22; OUR ALLOTTED LIFETIMES, Aug., p. 34; STICKING UP FOR MARSUPIALS, Oct., p. 22; THE TELLTALE WISHBONE, Nov., p. 26; CARING GROUPS AND SELFISH GENES, Dec., p. 20

### H

- Harner, M., THE ENIGMA OF AZTEC SACRIFICE, Apr., p. 46  
Hayflick, L., THE BIOLOGY OF AGING, Aug., p. 22

### J

- Jastrow, R., TROUBLESOME BLACK HOLES, Jan., p. 83; REPORT FROM MARS, Mar., p. 48; POST-HUMAN INTELLIGENCE, June, p. 12  
Jensen, K., SOCIAL COMMENTARY

- FROM THE CEMETERY, June, p. 32  
Jordan, P.A., THE WOLF THAT LOST ITS GENES, Dec., p. 80  
Joseph, Jr., A.M., REVIEW, Feb., p. 94

### K

- Keegan, M., BOTANICAS: PUERTO RICAN FOLK PHARMACIES, Aug., p. 64  
Keen, A.M., PALEONTOLOGICAL HOAXES, May, p. 24  
Knudson, P.M., THE CASE OF THE MISSING MONK SEAL, Oct., p. 78  
Koch, K.-F., FABULOUS TIMBUKTU, May, p. 68

### L

- Lang, J.W., THE ALLIGATOR REVEALED, June, p. 54  
Likens, G.E., THE FRESH AIR-CLEAN WATER EXCHANGE, Nov., p. 62  
Lindsey, A.A., THE SIGHTING AT PINE KNOT, Nov., p. 40

### M

- Majno, G., REVIEW, Apr., p. 95  
Maran, S.P., EUV MAKES THE GRADE, Feb., p. 85; LET THERE BE DARKNESS, Apr., p. 88; THE CYGNUS A CONUNDRUM, May, p. 84; RINGS AROUND URANUS, Aug., p. 88; RING GALAXIES, Nov., p. 106  
Marden, P., STREET DWELLERS, Nov., p. 78  
Marr, J.S., REVIEW, May, p. 88  
Mathias, E., BOTANICAS: PUERTO RICAN FOLK PHARMACIES, Aug., p. 64  
Miller, L.H., DANGEROUS NYMPHS OF NANTUCKET, Dec., p. 10  
Mintz, J.R., BROOKLYN'S HASIDIM, Jan., p. 46  
Morgan, D., REVIEW, Oct., p. 118  
Muñoz, J., CHILEAN FLAMINGO COURT AND DANCE, Dec., p. 72

### N

- Nicholson, T.D., CELESTIAL EVENTS, Jan., p. 80; Feb., p. 90; Mar., p. 94; Apr., p. 20; May, p. 78; June, p. 94; Aug., p. 82; Oct., p. 124; Nov., p. 104; Dec., p. 92  
Nietschmann, B., THE NICARAGUAN SKIN CONNECTION, Jan., p. 28; THE WIND CALLER, Mar., p. 10; THE BAMBI FACTOR, Aug., p. 84

### O

- Olano, M., A COARRANGEMENT OF KINGFISHERS, Feb., p. 58  
Orville, R.E., BOLTS FROM THE BLUE, June, p. 66

### P

- Pfletschinger, H., A CONJUGATION OF SNAILS, Aug., p. 104

- Pollack, J.B., VOLCANOES AND THE CLIMATE, Jan., p. 8  
Pritchard, P.C.H., THREE, TWO, ONE TORTOISE, Oct., p. 90

## R

- Roble, R.G., THE AURORAS, Oct., p. 60  
Rohrmann, G.F., MISLEADING MANTIDS, Mar., p. 66  
Rello, C.D., WHY SLUGS SQUABBLE, Nov., p. 46  
Roth, J., STREET DWELLERS, Nov., p. 78  
Rubin, G., EUCALYPTUS BARK, Dec., p. 36

## S

- Sears, P.B., REVIEW, Nov., p. 112  
Shaw, E., CAN ANIMALS ANTICIPATE EARTHQUAKES? Nov., p. 14  
Shaw, J. H., THE WOLF THAT LOST ITS GENES, Dec., p. 80  
Snow, D.R., ROCK ART AND THE POWER OF SHAMANS, Feb., p. 42  
Sokolov, R., HIGH TORTE, Jan., p. 75; HOW TO TREAT THE COMMON COLE, Feb., p. 22; STRANGE FRUITS, Mar., p. 84; HUMBLE PIE, Apr., p. 80; BANANAMANIA, May, p. 80; ORANGES AND THEIR COUSINS, June, p. 88; UP FROM CATSUP, Aug., p. 108; PALM READINGS, Oct., p. 114; THE QUALITY OF CORIANDER, Nov., p. 86; A CHRISTMASTIDE TREAT, Dec., p. 94  
Spring, M., THE EDGE OF EUROPE, Dec., p. 40  
Steiner, S., CHINA'S ANCIENT MARINERS, Dec., p. 48

## T

- Tamarin, A., HOW MUSSELS GET ATTACHED, May, p. 42  
Toon, O.B., VOLCANOES AND THE CLIMATE, Jan., p. 8  
Topoff, H., THE PIT AND THE ANTLION, Apr., p. 64

## V

- Valdez, R., FECUND MOUFLON, Nov., p. 72  
Vlach, J., SHOTGUN HOUSES, Feb., p. 50  
Vogt, P.R., HOT SPOTS, Apr., p. 36

## W

- Wellington, W.G., WHY SLUGS SQUABBLE, Nov., p. 46  
Welsch, R., SHELTERS ON THE PLAINS, May, p. 48  
West, J.F., THE EDGE OF EUROPE, Dec., p. 40  
Whittow, G.C., NIGHT SHIFT FOR SLOTHS AND OTHER SLUGGARDS, Jan., p. 66  
Williams, J.R., CALIFORNIA LITTER, June, p. 62  
Wilson, P.J., THE PROBLEM WITH SIMPLE FOLK, Dec., p. 26

## Z

- Zirin, H., SOLAR MAGNETISM, Dec., p. 100

## SUBJECT MATTER

- Africa, Feb., p. 76; May, p. 68  
Aging, Aug., p. 22  
Agriculture, May, p. 32  
Airs, Waters, and Places, Oct., p. 34; Dec., p. 10  
Alligator, June, p. 54  
Alpine cooking, Jan., p. 75  
American Indians, Feb., p. 42  
Animal consumption, Oct., p. 68  
Animals, imaginary traits, Aug., p. 84; sensing, Nov., p. 14  
Animal traders, May, p. 54

## ANTHROPOLOGY

- Australian wind caller, Mar., p. 10  
Aztec Indians, Apr., p. 46  
China, Dec., p. 48  
Ecuador Indians, Oct., p. 48  
Eskimo, Feb., p. 70; Mar., p. 54; Oct., p. 126  
Faeroe Islanders, Dec., p. 40  
Hasidim, Jan., p. 46  
Masked dancers, Mar., p. 42  
Mesoamerican Indians, Mar., p. 88  
Peruvian peasants, May, p. 32  
Puerto Rican botanicas, Aug., p. 64  
Spanish people, Apr., p. 58  
Street dwellers, Nov., p. 78  
Timbuktu, May, p. 68  
Tsimihety people, Dec., p. 26  
Antlion, Apr., p. 64  
Architecture, Feb., p. 50

## ART

- Rock, Feb., p. 42  
Stone faces, Jan., p. 60  
Artificial light and environment, Apr., p. 88

## ASTRONOMY

- Aurora, Oct., p. 60  
Black holes, Jan., p. 83  
Celestial Events, Jan., p. 80; Feb., p. 90; Mar., p. 94; Apr., p. 20; May, p. 78; June, p. 94; Aug., p. 82; Oct., p. 124; Nov., p. 104; Dec., p. 92  
Mars, Mar., p. 48  
Physics and cosmos, Oct., p. 106  
Sky Reporter, Jan., p. 83; Feb., p. 85; Apr., p. 88; May, p. 84; Aug., p. 88; Oct., p. 106; Nov., p. 106; Dec., p. 100  
Spaceship earth, Mar., p. 72  
Uranus, Aug., p. 88

- Atmosphere, Oct., p. 60  
Aurora, Oct., p. 60  
Australia, Mar., p. 10  
Aztec Indians, Apr., p. 46  
Babesiosis, Dec., p. 10  
Baffin Island, Feb., p. 70; Oct., p. 126  
Bambi, Aug., p. 84  
Bamboo, Apr., p. 8  
Bananas, May, p. 80  
Bark, eucalyptus, Dec., p. 36  
Bears, Aug., p. 74  
Bioelectricity, Oct., p. 84  
Biological time, Aug., p. 34  
Biology, May, p. 42; Aug., p. 22; Oct., p. 40

## BIOS

- Guayule, Nov., p. 94

## BIRDS

- Ducks, Oct., p. 40  
Evolution of, Nov., p. 14  
Flamingo, Dec., p. 72  
Kingfishers, Feb., p. 58





I  
N  
D  
E  
X

7

7

UMI

Pigeons, Nov., p. 40  
Whooping cranes, Mar., p. 22  
Black holes, Jan., p. 83  
Botanicas, Aug., p. 64  
**BOTANY**  
Bamboo, Apr., p. 8  
Cabbage, Feb., p. 22  
Dates, Oct., p. 114  
Eucalyptus tree, Dec., p. 36  
Guayule, Nov., p. 94  
Orchids, Dec., p. 64  
Tobacco, Apr., p. 22  
Tomato, Aug., p. 108  
Brain, June, p. 12  
Breath, Aug., p. 34  
Butterflies, June, p. 40  
Cabbage, Feb., p. 22  
Cake, alpine cooking, Jan., p. 75  
Cape Dorset Community, Feb., p. 70  
Caribbean monk seal, Oct., p. 78  
Catsup, Aug., p. 108  
Cauliflower, Feb., p. 22  
Celestial Events *see* Astronomy  
**CELLS**  
Animal, Aug., p. 22  
Human, Aug., p. 22  
Cemetery, June, p. 32  
Chestnuts, Dec., p. 94  
Chilean flamingo, Dec., p. 72  
China's ancient mariners, Dec., p. 48  
Cicada, Apr., p. 8  
Citrus fruits, June, p. 88  
**CLIMATE**  
and Auroras, Oct., p. 60  
and Energy, Oct., p. 8  
and Volcanoes, Jan., p. 8  
and Wind, Mar., p. 10  
Climatic change, Jan., p. 8; Oct., p. 8  
Coal, Oct., p. 8  
Computers, June, p. 12  
Conservation, Feb., p. 64  
Continental drift, Feb., p. 12  
Coral reefs, Apr., p. 72  
Coriander, Nov., p. 86  
Costa Rica, Mar., p. 34  
Cranes, Mar., p. 22  
Crocodiles, Jan., p. 28  
Cygnus A, May, p. 84  
Dates, Oct., p. 114  
Death, June, p. 32; Aug., p. 22  
Desert shrub (guayule), Nov., p. 94  
Dinosaurs, Nov., p. 26  
**DISEASE**  
Babesiosis, Dec., p. 10  
Malaria, Oct., p. 34  
Tropical, Oct., p. 34  
Tsetse fly, Feb., p. 76  
Earth history, June, p. 12  
Earthquakes, Nov., p. 14  
**ECOLOGY**  
Changes, Dec., p. 10  
Conservation, Feb., p. 64  
Forests, Nov., p. 62  
Organ perfection, Jan., p. 32  
**ECOSYSTEM**  
Coal, Oct., p. 8  
Coral reefs, Apr., p. 72  
Forest, Nov., p. 62  
Wolves, red, Dec., p. 80  
Ecuador, Oct., p. 48  
Electric storms, June, p. 66  
**ENDANGERED SPECIES**  
Fishes, Kentucky streams, Feb., p. 64  
Monk seal, Oct., p. 78  
Mud turtle, Apr., p. 52

Tortoise, Oct., p. 90  
Wolves, red, Dec., p. 80  
Enemas, ritual, Mar., p. 88  
**ENERGY**  
Coal, Oct., p. 8  
Eucalyptus tree, Dec., p. 36  
Solar, Nov., p. 62  
**ENVIRONMENT**  
and Architecture, Feb., p. 50  
and Auroras, Oct., p. 60  
and California litter, June, p. 62  
and Coal, Oct., p. 8  
Ecuador, Indian society, Oct., p. 48  
Forests, Nov., p. 62  
Jungles, Jan., p. 38  
Kentucky streams, Feb., p. 64  
Mount Rushmore, Jan., p. 60  
Mud turtle, Apr., p. 52  
Railroads, Nov., p. 90  
and Tropics, Oct., p. 34  
Eskimo, Feb., p. 70; Mar., p. 54; Oct., p. 126  
Eucalyptus tree, Dec., p. 36  
EUV (extreme ultraviolet wavelength), Feb., p. 85  
**EVOLUTION**  
of Buildings, Feb., p. 50  
Design, Jan., p. 32  
Dinosauria, Nov., p. 26  
and Intelligence, June, p. 12  
and Life history, May, p. 12; June, p. 12  
Micro- and macro-, June, p. 22  
Periodical cicada, Apr., p. 8  
Role of individual in, Dec., p. 20  
Farming, May, p. 32  
Faeroe Islanders, Dec., p. 40  
Fishes, Kentucky streams, Feb., p. 64  
Flamingo, Dec., p. 72  
Florida Keys, Apr., p. 72  
**FOOD**  
Alpine cooking, Jan., p. 75  
Bananas, May, p. 80  
Cabbage, Feb., p. 22  
Cake, Jan., p. 75  
Coriander, Nov., p. 86  
Chestnuts, Dec., p. 94  
Dates, Oct., p. 114  
English, Apr., p. 80  
Kiwi, Mar., p. 84  
Oranges, June, p. 88  
Snails, Aug., p. 104  
Tomato, Aug., p. 108  
Forests and ecology, Nov., p. 62  
Frogs, Jan., p. 38  
Galápagos, Oct., p. 90  
Genes, Feb., p. 34; Dec., p. 80  
Genetics, June, p. 22; Dec., p. 20  
**GEOLOGY**  
Coal, Oct., p. 8  
Continental drift, Feb., p. 12  
Earthquakes, Nov., p. 14  
Mountains and stone faces, Jan., p. 60  
Volcanoes, Jan., p. 8; Apr., p. 36  
Geomagnetic storms, Oct., p. 60  
Gravestones, June, p. 32  
Great Plains, North America, May, p. 48  
Hall of Reptiles and Amphibians, Nov., p. 98  
Hasidim, Jan., p. 46  
Hawaii, Kilauea, Apr., p. 36  
Health, Apr., p. 22; Oct., p. 68  
Herbs, Nov., p. 86  
**HISTORY**  
Chinese maritime, Dec., p. 48  
of Earth, June, p. 12

of Hasidim, Jan., p. 46  
 of Life, May, p. 12; June, p. 12  
 of Paris, Oct., p. 68  
 Hookworm, Oct., p. 34  
 Houses, Feb., p. 50  
 Howling monkeys, Mar., p. 34  
 Hunger, Oct., p. 68; 118  
 Iceland, Apr., p. 36

# INSECTS

Antlion, Apr., p. 64  
 Butterflies, June, p. 40  
 Cicada, Apr., p. 8  
 Mantids, Mar., p. 66  
 Tsetse, Feb., p. 76  
 Intelligence and animals, June, p. 12

# INVERTEBRATES

Arthropods, Dec., p. 10  
 of Coral reefs, Apr., p. 72  
 Mollusks, May, p. 42; Nov., p. 46  
 Mussels, May, p. 42  
 Snails, Aug., p. 104  
 Kingfishers, Feb., p. 58  
 Kiwi, Mar., p. 84  
 Korea, ancient, Mar., p. 42  
 Letters, Jan., p. 97; May, p. 20; June, p. 74;  
 Aug., p. 8; Oct., p. 132  
 Life history, May, p. 12; June, p. 12  
 Life span, Aug., p. 34  
 Light pollution, Aug., p. 88  
 Lightning, June, p. 66  
 Limb regeneration, Oct., p. 84  
 Litter study, California, June, p. 62  
 Little Diomed Island, Mar., p. 54  
 Macroevolution, June, p. 22  
 Madagascar, Dec., p. 26  
 Malaria, Oct., p. 34

# MAMMALS

Bears, Aug., p. 74  
 Howling monkeys, Mar., p. 34  
 Monk seal, Oct., p. 78  
 Sloths, Jan., p. 66  
 Walrus, Mar., p. 54; Nov., p. 52  
 Wild sheep, Nov., p. 72  
 Wolves, red, Dec., p. 80

Mantids, Mar., p. 66  
 Mariners, ancient, Dec., p. 48  
 Mars, Mar., p. 48  
 Marsupials, Oct., p. 22  
 Masked dancers, Mar., p. 42

# MATTER OF TASTE

Alpine cooking, Jan., p. 75  
 Bananas, May, p. 80  
 Cabbage, Feb., p. 22  
 Catsup, Aug., p. 108  
 Chestnuts, Dec., p. 94  
 Coriander, Nov., p. 86  
 Dates, Oct., p. 114  
 Kiwi, Mar., p. 84  
 Oranges, June, p. 88  
 Pie, Apr., p. 80  
 Maya, Mar., p. 88  
 Mesoamerican Indians, Mar., p. 88  
 Meteorology, June, p. 66  
 Mexico, Mar., p. 88; Apr., p. 46; June, p. 40  
 Microevolution, June, p. 22  
 Mollusks, May, p. 42; without shells, Nov.,  
 p. 46  
 Monarch butterflies, June, p. 40  
 Monkeys, howling, Mar., p. 34  
 Monk seal, Oct., p. 78  
 Monstrous forms, June, p. 22  
 Mouflon, Nov., p. 72  
 Mountains, carved, Jan., p. 60

Mud turtle, Apr., p. 52  
 Mussels, May, p. 42  
 Nantucket, Dec., p. 10  
 National parks, Aug., p. 74

# NATURALIST AT LARGE

Australian wind caller, Mar., p. 10  
 Bambi factor, Aug., p. 84  
 Paleontological hoaxes, May, p. 24  
 Railroads, Nov., p. 90  
 Replicators, Feb., p. 34  
 Reptiles, Jan., p. 28  
 New England, June, p. 32  
 New York City, street dwellers, Nov., p. 78  
 Nicaragua, Jan., p. 28  
 Observatories, Apr., p. 88  
 Orchids, Dec., p. 64  
 Organs, extreme perfection, Jan., p. 32  
 Paleontological hoaxes, May, p. 24  
 Parasitology, Oct., p. 34  
 Paris and war, Oct., p. 68  
 Passenger pigeons, Nov., p. 40  
 Periodicity, Apr., p. 8  
 Peru-Andes, May, p. 32  
 Pharmacies, Puerto Rican, Aug., p. 64  
 Photography competition awards, Aug.,  
 p. 46  
 Pigeons, Nov., p. 40

# PLANETS

Earth, Mar., p. 72  
 Mars, Mar., p. 48  
 Uranus, Aug., p. 88  
 Plants, Nov., p. 94  
 Plays, masked, Mar., p. 42

# POLLUTION

Air-water exchange, Nov., p. 62  
 Coal, Oct., p. 8  
 Light, Apr., p. 88  
 Presidential retreat, Pine Knot, Nov., p. 40  
 Puerto Rican people, Aug., p. 64  
 Radio energy, May, p. 84  
 Railroads, Nov., p. 90  
 Red wolf, Dec., p. 80  
 Regeneration, amphibians, Oct., p. 84

# RELIGION

Aztec Indians, Apr., p. 46  
 Hasidim, Jan., p. 46  
 Good Friday, Calanda, Apr., p. 58  
 Puerto Rican botanicas, Aug., p. 64  
 Replicators, Feb., p. 34

# REPTILES

Alligators, June, p. 54  
 Behavior, Apr., p. 52  
 Crocodiles, Jan., p. 28  
 Frogs, Jan., p. 38  
 Regeneration, Oct., p. 84  
 Tortoise, Oct., p. 90  
 Turtle, Apr., p. 52  
 Ring galaxies, Nov., p. 106  
 Rings, Uranus, Aug., p. 88  
 Ritual beverages, Mar., p. 88  
 Rock art, Feb., p. 42  
 Rubber, Nov., p. 94  
 Salamanders, Oct., p. 84  
 Scaling theory, Aug., p. 34  
 Shamans, Feb., p. 42  
 Sheep, wild, Nov., p. 72  
 Shelters, May, p. 48  
 Sky Reporter *see* Astronomy  
 Sloths, Jan., p. 66  
 Slugs, Nov., p. 46  
 Snails, Aug., p. 104

# SOLAR

Energy, Nov., p. 62  
 Magnetism, Dec., p. 100  
 System, Mar., p. 72  
 South African mantids, Mar., p. 66

# SOUTH AMERICA

Jungles, Jan., p. 38  
 Marsupials, Oct., p. 22  
 Space, Feb., p. 85  
 Spain, Calanda, Apr., p. 58  
 Stone faces, Jan., p. 60  
 Stoney Bear, Aug., p. 74  
 Street dwellers, Nov., p. 78  
 Technology, agricultural, May, p. 32  
 Theodore Roosevelt, Nov., p. 40

# THEORY

Continental drift, Feb., p. 12  
 Early universe, Oct., p. 106  
 Evolution, Feb., p. 34  
 Natural selection, Jan., p. 32; Dec., p. 20  
 Relativity, Jan., p. 83  
 Scaling, Aug., p. 34

# THIS VIEW OF LIFE

Bamboo clock, Apr., p. 8  
 Continental drift, Feb., p. 12  
 Design perfection, Jan., p. 32  
 Dinosauria, Nov., p. 26  
 Evolution, May, p. 12; Dec., p. 20  
 Lifetimes, Aug., p. 34  
 Marsupials, Oct., p. 22  
 Monstrous forms, June, p. 22  
 Spaceship Earth, Mar., p. 72  
 Timbuktu, May, p. 68  
 Tobacco, Apr., p. 22  
 Tomato, Aug., p. 108  
 Tortoise, Oct., p. 90  
 Tropical diseases, Oct., p. 34  
 Trypanosomiasis, Feb., p. 76  
 Tsetse, Feb., p. 76  
 Turtle, Apr., p. 52  
 Uranus, Aug., p. 88  
 Viking lander experiments, Mar., p. 48  
 Volcanic regions, Apr., p. 37  
 Volcanoes, Jan., p. 8; Apr., p. 36  
 Walrus, Mar., p. 54; Nov., p. 52  
 War and food, Oct., p. 68  
 Water, clean, Nov., p. 62  
 Wavelength, extreme ultraviolet, Feb., p. 85  
 Weather, Mar., p. 10; Jan., p. 66; Oct., p. 60  
 Weaving and weavers, Ecuador Indians,  
 Oct., p. 48  
 Whooping cranes, Mar., p. 22  
 Wind caller, Mar., p. 10  
 Wolves, red, Dec., p. 80

# BOOKS IN REVIEW

*Chinese Natural History Drawings*,  
 Mar., p. 79  
*Epidemic and Peace*, Apr., p. 95  
*Epidemics*, Apr., p. 95  
*Food in Chinese Culture*, Aug., p. 94  
*How the Other Half Dies*, Oct., p. 118  
*Killing the Hidden Waters*, Nov., p. 112  
*Konrad Lorenz: A Biography*, June, p. 78  
*Life that Lives on Man*, The, May, p. 88  
*People of the First Man*, Feb., p. 94  
*Plagues and Peoples*, Apr., p. 95  
*Rails of the World*, Dec., p. 106  
*Worlds of Ernest Thompson Seton*, The,  
 Jan., p. 90



